SASKATCHEWAN

Slender Mouse-ear-cress

(Halimolobos virgata)

Status: Threatened

Species at Risk

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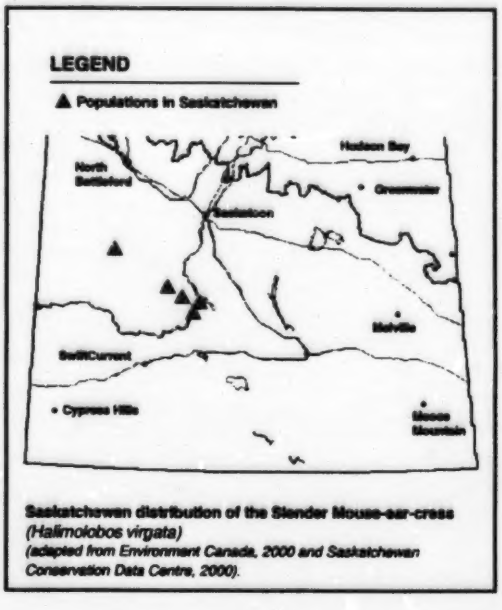
Description

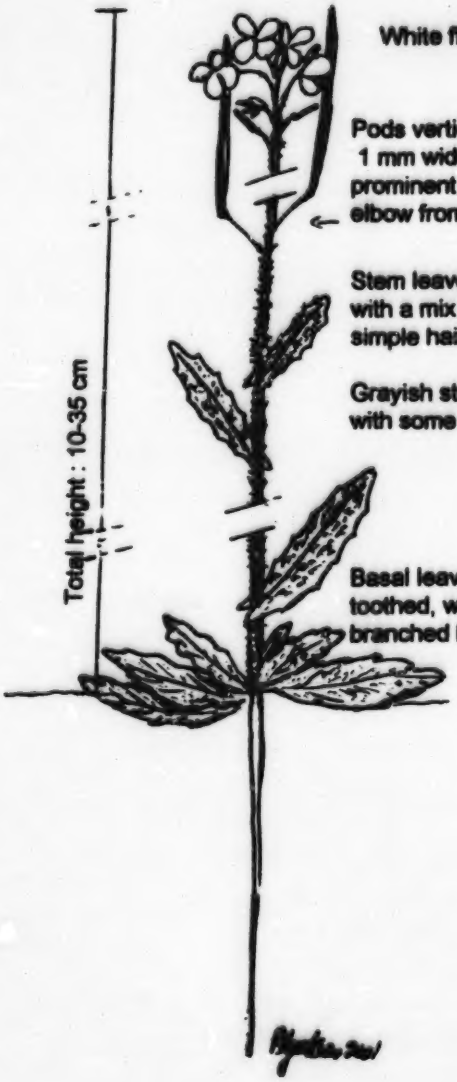
Plant: Slender Mouse-ear-cress is a biennial species that belongs to the Brassicaceae (formerly the Cruciferae), or mustard family. The plant can have one to several stems, coming from the center of a cluster of leaves at their base. The stems often branch and grow between 10 and 35 centimetres tall. They have a grayish appearance due to a covering of simple and branched hairs. Slender Mouse-ear-cress has many leaves at the base of the stem that are three to six centimetres long and five to 15 millimetres wide. They taper to a slender basal stalk and may be pointed or blunt at the tip. These leaves have prominently toothed edges. The plant also has leaves on the stem. Each less toothed leaf on the stem is largest at the base where it clasps the stem. The stem leaves progressively decrease in size, with the smallest near the top, as illustrated. All leaves are also hairy: branched hair on the bottom leaves, and a mixture of simple and branched hair all the way to the inflorescence.



Saskatchewan distribution of the Slender Mouse-ear-cress *(Halimolobos virgata)*
(adapted from Environment Canada, 2000 and Saskatchewan Conservation Data Centre, 2000).

Slender Mouse-ear Cress

(Halimolobos virgata)

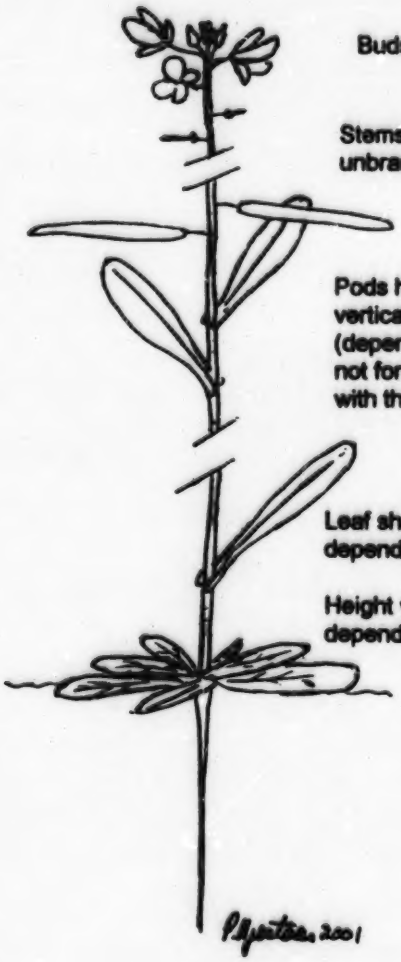

White flowers at the tip
Pods vertical, smooth, 1 mm wide, with 2 prominent ribs, forming an elbow from the stalk
Stem leaves mainly toothed, with a mix of branched and simple hair
Grayish stems, hairy, with some branched hair
Basal leaves prominently toothed, with mostly branched hair
Total height : 10-35 cm

Pod cross-section

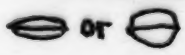
1 mm

Rock Cress spp

(Arabis sp)


Buds at the tip
Stems with no hair or unbranched hair
Pods horizontal, vertical, or hanging (depending on species), not forming an elbow with the stalk
Leaf shape variable, depending on species
Height variable, depending on species

Pod cross-section



1-3 mm
Depending on species

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Like most species of the mustard family, flowers and pods are quickly present at the same time on the plant, and both are needed for definite identification.

Flowers: The many flowers open at the tip of the stem as it develops. Each flower is attached to the stem by a slender stalk seven to 11 millimetres long. The main stem continues to grow, causing the bunched flowers to become widely spaced fruits.

The four outer flower parts (sepals) are purplish and the inner four (petals) are white, with pink or lavender veins. Petals are only four millimetres long.

Fruits and seeds : The long narrow fruiting pods are cylindrical, squarish in cross-section (due to the ribs) and upright at the ends of their stalks, forming an elbow. They measure 1.5 to four centimetres long and only 0.1 centimeter wide, and have one visible rib on each side. The numerous seeds are crowded and partially organized into two rows.

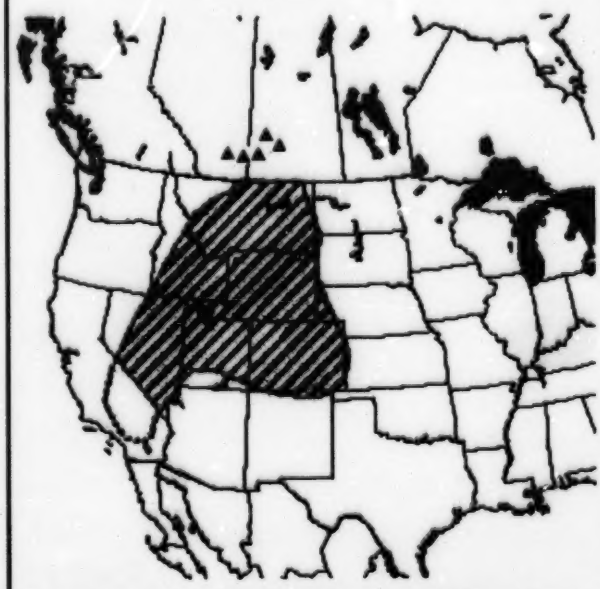
North American Distribution of the Slender Mouse-ear-cress
(*Halimolobos virgata*)

LEGEND

▲ Canadian population

United States distribution

need to be clarified



(adapted from Environment Canada, 2000 and Smith, 1999).

Similar species: Slender Mouse-ear-cress can be distinguished from other members of the mustard family (Rock Cress, *Arabis* species) by its white flowers opening while still at the stem tip, by the presence and location of the many-branched hairs, and by the fruit which is squarish in cross-section. Some Rock Cress may have white flowers, but only flower buds occur at the stem tips. Flowers do not open until the stem has grown longer. Hairs are absent or unbranched on stems and leaves. Fruits of Rock Cress are usually somewhat flattened with smooth surfaces. The pods never form an elbow with their stalk.

Status

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed Slender Mouse-ear-cress as endangered in 1992 and down listed it to threatened in 2000 as an increased distribution and population was found in Alberta. Listed as a threatened species in Saskatchewan in *The Wild Species at Risk Regulations*, the Slender Mouse-ear-cress is protected on private, provincial and federal lands under part V of *The Wildlife Act*.

Slender-mouse-ear-cress is found only in western North America. In the United States the species is found in Montana, eastern Idaho, Wyoming, Colorado, Utah, Nevada, and southeastern California.

Canadian populations of Slender Mouse-ear-cress are found only in southeastern Alberta and southwestern Saskatchewan. Slender Mouse-ear-cress is found in three sites in Alberta: Matzhiwin Creek, Middle Sand Hills - South Saskatchewan River, and west of Burstall. The Matzhiwin Creek site is associated with the Red Deer River and is the only site in Alberta that is not associated with the South Saskatchewan River.

In Saskatchewan, Slender Mouse-ear-cress is found in six locations. Five of the sites occur around Diefenbaker Lake and along the South Saskatchewan River. The sixth site is found to the north near Stranraer. Two of these sites were discovered in 1991: one just east of the Alberta border along the South Saskatchewan River, and the other at Alkali Creek.

In 1997, two sites were surveyed and a total of only eight plants were found plus some dried stalks. In 1999, all the Saskatchewan sites were visited but no plants were located. The factors causing the population crash are not known.

Historically, Slender Mouse-ear-cress was found in Cypress Hills (1895) and Medicine Hat (1894) within Alberta, and in Wood Mountain (1895) within Saskatchewan. None of these three sites has been relocated.

Habitat

Slender Mouse-ear-cress grows on short to mid-grass prairie. It prefers dry, sandy alkaline soils on flat prairie or eroded hillsides. Slender Mouse-ear-cress will not grow on stabilized sand dunes. The species is almost always associated with Silver Sagebrush (*Artemisia cana*) and Plains Pricklypear (*Opuntia polyacantha*). These two species provide wind shelter.

Life Cycle

Slender Mouse-ear-cress is a biennial or a winter annual species. Not much is known about the plant's life cycle. In Saskatchewan, it has been collected with flowers and pods together from May 16 to June 9. The plant is an ephemeral, which means that it flowers early, sets seed, and dies, all in a short period of time. It is not known why the plant is abundant one year, disappears for one to several years, and then reappears in small or expanded populations. Research is necessary to gain more information on the life cycle of this plant.

Limiting Factors and Recovery Needs

Loss of habitat: The main factor threatening Slender Mouse-ear-cress is loss of habitat due to industrial and agricultural activity. Slender Mouse-ear-cress has difficulty reestablishing on previously turned soil. In a few cases where gas pipelines have gone through, Slender Mouse-ear-cress occurs on both sides of the pipeline right-of-way, but not where the soil was turned. The turned soil, combined with the introduction of weedy species, results in significant habitat loss for the species. The main Canadian population, found in Alberta, west of Burstall, Saskatchewan, is located within one kilometre of the Empress Gas Plant. Significant habitat loss has already resulted near this site due to the development of pipelines, pumping stations, and road construction.

Suitable habitat for Slender Mouse-ear-cress must be secured in order for the species to survive. Continued monitoring, as well as detailed research on the species, its habitat requirements, and the effects of industrialization, are required to understand the plant's life cycle and the factors limiting its survival.

Recovery Actions: There is currently no recovery plan in place for Slender Mouse-ear-cress. Detailed monitoring as well as securing the remaining habitat for the plant have been recommended for preserving the species. Slender Mouse-ear-cress has been protected since 1999 on private, provincial and federal land in Saskatchewan, under part V of *The Wildlife Act*.

In many cases the entire ecosystem is endangered and not just a specific species. These ecosystems are fragile and must remain undisturbed. The continued survival of all species at risk relies on protecting the habitats of the species at risk as well as the species themselves.

Important: All endangered species, including plants, are protected in *The Wild Species at Risk Regulations* under part V of *The Wildlife Act*. Slender Mouse-ear-cress is protected on private, provincial and federal lands. It is unlawful to pick or collect plants, or seeds of species at risk without a special permit.

If you find Slender Mouse-ear-cress growing in the wild, please contact the Saskatchewan Conservation Data Center online at www.biodiversity.sk.ca

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Selected References

Please contact your local library or visit the Internet sites below for more information on Slender Mouse-ear-cress.

Environment Canada. 2000. All species at risk (Map). [Online]
http://www.sis.ec.gc.ca/cgi-sas/endanew.exe
Last visited: March 15, 2001

Environment Canada. 1999. Slender Mouse-ear-cress. [Online]
http://www.speciesatrisk.gc.ca/Species/English/SearchDetail.cfm?SpeciesID=192
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Smith, Bonnie. 1999. COSEWIC status report on slender mouse-ear-cress. The Committee on the Status of Endangered Wildlife in Canada. 15pp.

July, 2001

Saskatchewan Environment and Resource Management

Fish and Wildlife Development Fund

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